Real Ease

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Test Plan Document

1. Overview

This test plan outlines the approach for verifying that the RealEase platform meets its defined requirements and functions as intended. It covers test cases for the core features: the Neighborhood Insights Dashboard, the Real-Time ROI Calculator, and the Detailed House Comparison Tool. Each feature will be examined through a series of functional and non-functional tests, considering both typical and edge cases to ensure robustness.

1.1 Objectives

- Validate that the application meets the user requirements
- Ensure all features function correctly and are integrated seamlessly
- Identify and document any issues or defects in the application

1.2 Test Scope

The scope of testing includes:

1. Neighborhood Insights Dashboard
2. Real-Time ROI Calculator
3. Detailed House Comparison Tool
4. User Interface (UI) and User Experience (UX)
5. Performance and Load Testing
6. Security and Data Integrity Testing

2. Test Cases

2.1 Neighborhood Insights Dashboard

2.1.1. Data Accuracy

Test Case ID: NID-001

Objective: Verify the accuracy of neighborhood data displayed

Input: Select a neighborhood

Expected Result: The displayed data matches the latest information from the APIs (crime rates, school ratings, etc)

Execution Steps:

1. Select various neighborhoods
2. Cross-verify displayed data with trusted sources

Unusual Input:

- Select neighborhoods with minimal data available

  Expected Result: The system should display a user friendly message indicating limited data availability

2.2 User Interface Functionality

Test Case ID: NID-002

Objective: Verify the usability of the dashboard interface

Input: Navigate through the dashboard

Expected Result: Users can easily navigate without confusion and find necessary information

Execution Steps:

1. Navigate between different sections (schools, crime, etc)
2. Check for broken links or dead ends

Unusual Input:

- Attempt to navigate using keyboard shortcuts only

  Expected Result: All functionalities should be accessible via keyboard

3. Real-Time ROI Calculator

3.1. Calculation Accuracy

Test Case ID: ROI-001
Objective: Ensure accurate ROI calculations
Input: Property details (purchase price, rental income, expenses)
Expected Result: Calculated ROI matches manual calculations for given inputs
Execution Steps:

1. Input various property scenarios
2. Cross-check calculations with financial spreadsheets

Unusual Input:

- Input extreme values (e.g., $0 purchase price, extremely high rental income)

  Expected Result: The system should handle these gracefully, providing appropriate warnings or error messages

3.2. User Input Handling

Test Case ID: ROI-002

Objective: Verify handling of invalid user inputs

Input: Enter invalid data types (e.g., letters instead of numbers)

Expected Result: System prompts user with clear error messages

Execution Steps:

1. Attempt to submit the form with various invalid inputs
2. Verify that the application does not crash and guides users to correct errors

4. Detailed House Comparison Tool

4.1. Multi-House Comparison

Test Case ID: DHC-001

Objective: Verify functionality of comparing multiple houses

Input: Select up to four properties for comparison

Expected Result: Comparison displays all selected properties side by side

Execution Steps:

1. Select different properties
2. Verify that the comparison accurately reflects all inputted data

Unusual Input:

- Attempt to compare more than four properties
  Expected Result: System should restrict to four and provide user feedback

4.2 User Preferences Input

Test Case ID: DHC-002

Objective: Ensure user preferences are correctly recorded and used in recommendations

Input: Specify preferences for the scoring algorithm

Expected Result: Recommendations reflect user inputs accurately

Execution Steps:

1. Input varying preferences
2. Check that results adjust according to preferences

Unusual Input:

- Input conflicting preferences (e.g., low price and high luxury features)
  Expected Result: System should provide a clear message indicating conflicts and suggest revisions

5. Performance and Load Testing

5.1. Load Handling

Test Case ID: PLT-001

Objective: Test the application under high traffic conditions

Input: Simulate multiple users accessing the platform simultaneously

Expected Result: The system should remain responsive without significant hindrance in performance

Execution Steps:

1. Use load testing tools to simulate traffic
2. Monitor application performance metrics

5.2. Data Retrieval Speed

Test Case ID: PLT-002

Objective: Measure the speed of data retrieval for APIs

Input: Request data from various APIs

Expected Result: Data should be retrieved within acceptable time limits (e.g., under 3 seconds)

Execution Steps:

1. Measure the response time for API calls
2. Document any delays or issues encountered

6. Security and Data Integrity Testing

6.1. User Data Protection

Test Case ID: SDT-001

Objective: Ensure user data is stored and transmitted securely

Input: Create user accounts and input personal information

Expected Result: Data should be encrypted in transit and at rest

Execution Steps:

1. Test data submission and retrieval processes
2. Verify encryption protocols in place

6.2. Vulnerability Assessment

Test Case ID: SDT-002

Objective: Identify vulnerabilities in the application

Input: Use automated tools to scan for security weaknesses

Expected Result: All critical vulnerabilities should be identified and documented

Execution Steps:

1. Run vulnerability scanning tools against the application
2. Review findings and create a mitigation plan

7. Conclusion

This test plan is designed to ensure that RealEase not only meets functional requirements but also provides a reliable, secure, and user friendly experience. By conducting comprehensive testing on all features and handling both typical and unusual inputs, we aim to identify and resolve potential issues before deployment, ensuring that users can confidently rely on the platform for their real estate needs.